ABSTRACT OF THE DISCLOSURE

A spin-valve thin-film magnetic element includes a substrate, a composite formed thereon, and electrode layers formed on both sides of the composite. The composite includes an antiferromagnetic layer, a pinned magnetic layer, a nonmagnetic conductive layer, a free magnetic layer, a mean-free-path-extending layer, and an exchange bias layer. The mean-free-path-extending layer may be a back layer or a mirror reflective layer. The mean-free-path-extending layer extends the mean free path of spin-up conduction electrons in the spin-valve thin-film magnetic element. This spin-valve thin-film magnetic element meets trends toward a narrower track width.

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